

of some of the many able collectors who have been long resident in New Zealand.

Sir Walter has explained (*op. cit.* p. 193) that there is "considerable variation in size" in *Spiloglaux novæ-zealandiæ*, and mentions one he received from Mr. W. T. L. Travers as "unusually small in all its proportions"; he also describes the specimen in the Leiden Museum as "equalling in size small examples of *Spiloglaux novæ-zealandiæ*"; indeed, the subject is so exhaustively treated in his great work, that no more need be added here. No New-Zealand colonist has ever had such facilities for collecting and studying the habits of our remarkable birds, and for examining collections in all parts of the world, as this distinguished ornithologist.

The fact of the specimen of the so-called *Scops novæ-zealandiæ* in the Leiden Museum being labelled "Nouvelle Zélande" *without more definite authority*, is, I think, sufficient to justify Sir Walter Buller in excluding the species from his work on the birds of New Zealand.

III.—*On the Coloration of the Young in the Psittacine Genus Eclectus.* By Dr. A. B. MEYER.

(Plate I.)

THE colour of the young of those species of the genus *Eclectus* in which the males are green and the females red has often been discussed, and every possible opinion has been maintained by various writers. I myself have had at different times very different and erroneous notions on this question, which, however, I believe I have settled definitely in my paper "Ueber die Färbung der Nestjungen von *Eclectus*, Wagl." ('Zeitschrift für wissenschaftliche Zoologie,' vol. xxxvii. pp. 146–162). In this I proved that the young males are green and the young females red from the nest, as had been asserted by some authors before. In spite of this, Dr. Gadow (Bronn's 'Klassen und Ordnungen des Thierreichs,' vol. vi. pt. iv. Aves, p. 585) has even recently (1889) stated that the young ones are "reddish, but not yet green." This is, no doubt, a mistake.

Two young females of *E. roratus* were figured by me in

the year 1884 from a pair hatched in captivity ('*Zeitschrift für die gesammte Ornithologie*,' vol. i. p. 274, pl. xvi.), and I am now able to offer a figure (Plate I.) of a young male of the same species, hatched in captivity by the same gentleman whom I had to thank five years ago for the two females—Mr. P. Hieronymus, then of Karlsruhe, now of Blankenburg in the Harz.

I need not describe in detail the plumage of the young male (No. 12,000, Mus. Dresd.) now figured, as all its characteristics are clearly shown in the Plate, and as the plumage from the very beginning equals that of the adult in the brilliancy of its green, blue, and red. It is, however, remarkable that all these colours of the adult male appear in this early stage of development of the plumage of the nestlings.

The young bird figured was not quite seven weeks old when it died; it lived from the 24th of June till the 9th of August, and died from suffocation by accident. The dissection proved it to be a male. Its mate, still living, is, judging from its green colour, likewise a male.

I may draw attention to the fact that the pair hatched by Mr. Hieronymus in the year 1884 consisted of two females, and that the pair recently hatched consisted of two males. I suppose that this also may occur in a state of nature, but that just as often the pair may be composed of male and female. As to this point I am not aware that trustworthy observations have been made; the few as yet published will be found in my paper already quoted (*Z. f. wiss. Zool.* xxxvii. pp. 150, 151). Practical bird-breeders are of opinion that the first brood of the year are usually males and the second females. This may be the result of some observations, but I do not believe that it is a rule which can be relied upon. In a covey of Partridges there are said to be always more cocks than hens. The facts known as to the relative number of the two sexes in birds are very scanty and not at all to be relied upon. (See Darwin's '*Descent of Man*,' 1871, vol. i. p. 306; v. Hensen, '*Physiologie der Zeugung*,' 1881, p. 205; C. Düsing, '*Die Regulirung der Geschlechtsverhältnisse*,' 1884, p. 184, &c.)

Mr. Hieronymus has hatched since the year 1884 from the same female *Eclectus*, with two different males, a series of young ones, but, unfortunately, pairs were only reared on two occasions; besides these only single males were reared. In cases when the embryos died in the egg, the sex was not determined, though the embryos have been generally preserved. Nevertheless it may not be without interest to enumerate the whole series of eggs deposited:—

1884. First deposit, 2 embryos.

Second deposit, 2 *females*, which lived five and six weeks, and were figured by me (Z. f. ges. Orn. i. pl. xvi.).

Third deposit, 1 embryo and 1 *green male*, which was reared.

1885. First deposit, 1 embryo and 1 *green male*, which was reared, and which was given to me by Mr. Hieronymus in the 8th month of its life. It lived with me for three years, and was killed by accident.

Second deposit, 2 unimpregnated eggs.

1886. First deposit, 1 embryo and 1 *green male*.

Second deposit, 2 embryos.

Third deposit, 1 embryo and 1 *green male*, reared.

1887. First deposit, 2 embryos.

Second deposit, 2 embryos.

1888. First deposit, 2 embryos.

Second deposit, 2 embryos.

Third deposit, 1 embryo and 1 unimpregnated egg.

Fourth deposit, 2 unimpregnated eggs.

Fifth deposit, 2 unimpregnated eggs.

1889. First deposit, 2 unimpregnated eggs.—N.B. In these last cases the female paired with another male.

Second deposit, 2 *green males*, one of which is now figured (Plate I.) from the stuffed skin; the other is still living.

At the same time Mr. Hieronymus paired a female of *Eclectus cardinalis* (Bodd.) from Ceram with the male bird

which had been productive with the female of *E. roratus*, and got the following results :—

1888. First deposit, 2 embryos.
 Second deposit, 2 embryos.
 Third deposit, 2 unimpregnated eggs.
 Fourth deposit, 2 *young birds*, which died after one or two days.
 Fifth deposit, 1 *green male* (which was reared) and 1 embryo.
1889. First deposit, 2 embryos.
 Second deposit, 2 unimpregnated eggs.
 Third deposit, 2 unimpregnated eggs.

Therefore from all these deposits of eggs only two females and seven males have been reared and of these only four males are still living. The sex of these four males is only determined by the colour of the plumage, a character, however, which appears to be entirely trustworthy. As Mr. Hieronymus has placed nineteen of the embryos in my hands, ten of which are in pairs, I may, perhaps, still succeed by microscopical investigation in determining the sexes, and thus ascertain whether the male sex prevails or not, and whether a pair among them does not sometimes consist of male and female.

IV.—*An Attempt to Diagnose the Pico-Passerine Group of Birds and the Suborders of which it consists.* By HENRY SEEBOHM, F.Z.S.

IN my investigations into the osteology of the Grallo-Galline and Ardeo-Anserine group of birds (Ibis, 1888, p. 415, and 1889, p. 92) I have found that however constant a character might be in one or more groups, there were almost sure to be other groups in which it broke down. In investigating the large group of birds consisting of the Passeres and the Picariæ, it seems as if osteological characters ceased to be entirely reliable, and required the assistance of other characters to make the diagnoses of the subdivisions complete.

